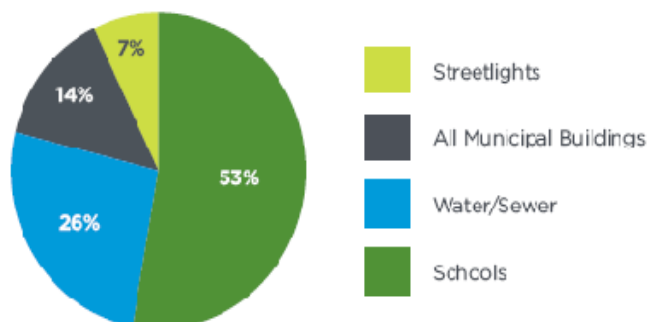


Getting Started with Exterior LED Lighting in Massachusetts

Streetlights in Massachusetts

Streetlights and traffic lights accounted for approximately 7 percent of all municipal energy usage in Massachusetts during FY 2011, with total costs statewide estimated to be more than \$17 million.

Municipal Electricity Use by Sector, FY2011



Advantages of LED Streetlights:

- Decreased energy consumption and costs
- Reduced maintenance costs
- Improved safety through enhanced visibility
- Minimized light trespass and pollution
- Instant-on with no run-up or re-strike delays
- An opportunity to implement programmable controls
- No Mercury, lead, or other known disposable hazards

What Kind of Exterior Lights Can Be Retrofitted With LEDs?

- All metered, exterior lights
- Traffic lights
- Parking lot lights
- Exterior building lights
- Decorative streetlights
- Other metered streetlights

What about unmetered streetlights? Or utility-owned streetlights?

LED streetlights may be installed in unmetered, municipally-owned streetlights served by NStar, WMECO, Unitil and Cape Light Compact (i.e., in all Massachusetts investor-owned electric utility service areas except National Grid). Due to existing utility tariffs, however, local streetlights which are *owned by utilities* cannot currently be converted to LEDs. DOER is working with the state's electric utilities to develop a coordinated approach to overcome barriers (including tariff issues) and bring the option of LED streetlights to all municipalities in Massachusetts.

How Much Energy and Money Do LEDs Save?

Energy savings can range 25-50% depending upon the current lighting technology. When combined with the reduced maintenance costs, an additional 25% cost savings may be achieved.



But Aren't LEDs Expensive?

Both LEDs and induction lights (another highly efficient streetlight option) are relatively expensive with common costs ranging for induction lights from \$200-\$300 and for LEDs from \$300-\$750 (versus a standard high pressure sodium bulb at \$70-\$100). The cost ranges are extremely large due to many variables such as lighting design, fixture replacements, project complexity, labor contracts and purchase size.

The cost-effectiveness to switch to LEDs is best for conversion from mercury vapor lights due to their higher energy use; for conversion from high pressure sodium bulbs, a higher wattage ($\geq 150W$) is more likely to make a project cost-effective. Cost-effectiveness is also enhanced through large, coordinated retrofit projects, which should be increasingly possible as tariffs are approved for unmetered streetlights (see below).

To calculate your potential costs, Department of Energy's [Municipal Solid-State Street Lighting Consortium](#) has released a [Retrofit Financial Analysis Tool](#).

LEDs Sound Great, How Do I Get Started?

- Efficiency Vermont has released a Step-by-Step guide to [Improving Efficiency in Municipal Street and Public Space Lighting](#) that provides an excellent overview of the process, from preparing a street lighting inventory to securing funding and implementation.

Getting Started with Exterior LED Lighting in Massachusetts

How Do I Buy LED Streetlights?

- Work with your Mass Save® electric utility representative
- Select from Design Lights Consortium qualified products list: www.designlights.org
- Purchase off the statewide FAC76 contract, Category 6 www.comm-pass.com
- Contact Helen Aki at haki@mapc.org for more info

What funding is available for streetlight retrofit programs?

Municipalities use a variety of financing sources, including:

- Green Communities grants
- Energy Management Services (Performance Contracts)
- On-bill financing
- Municipal bonds

Engage your Community

Converting to high-efficiency streetlights is a highly visible efficiency project that demonstrates a municipality's commitment to energy efficiency, climate change mitigation and fiscal responsibility. As is the case with any community-wide project, municipalities contemplating to undertake a streetlight retrofit project should provide notice to the community at large and to specifically-impacted neighborhoods, and provide opportunities for public input. Installation of demonstration and/or pilot projects, and photo documentation of individual lights and roadways before and after changing to LEDs may help answer residents' questions and illustrate the benefits of this technology.



For More Information

Consider joining the Department of Energy's [Municipal Solid-State Street Lighting Consortium](#). The Consortium share technical information and experiences related to LED streetlight and outdoor lighting demonstrations. It also provides an extensive list of [Outdoor Lighting Resources](#).

The Department of Energy also sponsored two very helpful webinars: [Overcoming Common Pitfalls: Energy Efficient Lighting Projects](#) (October 10, 2010) and [Exterior Solid State Lighting Solutions for Municipalities](#) (April 19, 2011).

Another great resource is Delaware Valley Regional Planning Commission's [Energy Efficiency Traffic Signals & Streetlights](#) publication. It provides an overview of technical information as well as best practices and planning considerations.

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